SPALDINGS TINEDWEEDER

Product No. **16130**

Operating Instructions

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INTRODUCTION

1.0 Warranty

The Manufacturer's warranty covers a period of 12 months from the date of purchase.

The warranty applies to the repair and replacement of parts that a careful inspection by the manufacturer reveals as faulty (tines excluded) free of charge.

The warranty does not cover any direct or indirect damage and it is limited to faults in the material only.

The warranty is not applicable to returned parts that have been disassembled, tampered with or repaired by non-authorised personnel.

Moreover, the replacement and repairing of parts covered by warranty does not extend the expiring date of the warranty.

The customer is eligible for warranty only in case of complete observance of the conditions concerning the warranty applicability and reported in the supply contract.

1.1 Warranty inapplicability

On delivery you must verify the integrity of the machine and the accessories. Any complaint must be presented within 3 days of the delivery of the machine.

Besides those situations described in the supply contract, the warranty is not applicable in the following cases:

- Whenever the damage is due to wrong manoeuvre by the operator.
- Whenever the damage is due to insufficient maintenance.
- Whenever the damage is due to inappropriate use of the machine.
- Whenever the damage is due to modifications, repair or substitution of parts of the machine with non-original spare parts without the approval of the manufacturer.
- Whenever one or more safety systems have been removed.
- Whenever the customer has not followed the instructions provided in the manufacturers handbook.

Any other damage due to malpractice and negligence is not covered by warranty. Once the warranty has expired, the manufacturer is automatically released of any responsibility for any damage.

1.2 Identification label

You can find the registration number of the Spring-tined harrow stamped on the identification label (see Fig.1).

The label contains the following information:

– Address of the Manufacturer,
– "EU" mark,
A Identification number of the machine,
B Model of the machine,
D Weight (kilograms).

The above listed details must be cited during the request of spare parts or assistance.

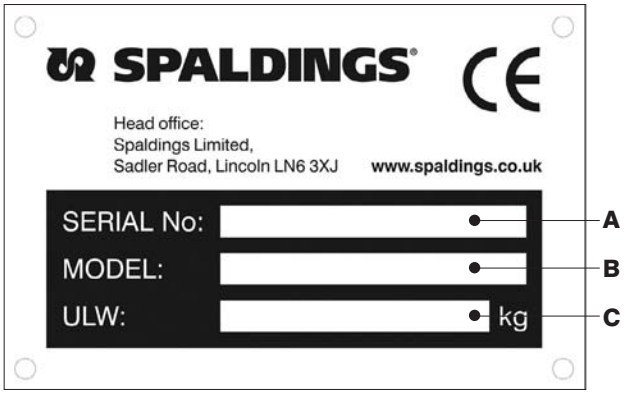


Fig.1 Identification plate

1.3 Spring tined harrow description

The Spring-tined harrow has been designed and built according to the health and safety requirements of the European Community, included in the directive 98/37/EU most commonly known as "Machines Directive."

The spring-tined harrow does not compromise the safety of persons, animals or objects and therefore is supplied with:

- EU declaration of conformity,
- EU mark,
- Instructions and maintenance handbook.

Features:

- Suitable for tractors with category 2, 3-point linkage.
- 6 metre working width.
- Equipped with four 1.5m (4'11") wide individual floating frames
- Hydraulic parallel folding frame for safe road transport
- Floating frames equipped with 6 rows of 8mm diameter double coil flexible tines – the high number of spikes increasing work efficiency.
- Centralised adjustment: Allows the angle of all tines on a frame to be adjusted simultaneously with a single lever to create a stronger or weaker tine action on the ground.

The Spring-tined harrow as a "micro-hoeing" action, loosening the top soil to mechanically control weeds – reducing weed control expenses whilst being environmentally safe.

Section 2

SAFETY GUIDELINES

2.0 Operator safety

The safety of the operator is paramount. Every possible risk as been foreseen during the design and manufacture of the Spring tined harrow and all necessary safety measures taken.

However accidents can occur through misuse therefore it is advisable to read the manufacturers handbook to ensure operation and adjustment of the machine is carried out safely.

The manufacturer declines all responsibility for any non-observance of safety and prevention instructions.

The manufacturer declines any responsibility for any damage caused by the incorrect use of the machine or by modifications applied without permission.

WARNING
You must pay attention where this warning sign appears in the text.

2.1 Safe use

- Do not allow anyone who has not read the manufacturers handbook to operate the machine.
- Do not allow anyone who is not adequately trained and qualified and in good health to operate the machine. The operator must have a valid driving licence.
- Do not leave the tractor when the engine is running: before leaving the driver seat you must lower the machine, apply the hand brake and switch the engine off.
- Do not stand between the tractor and the spring-tined harrow whenever the engine is running.
- Do not carry persons, animals or objects on the spring-tined harrow.
- Do not stand in the working area of the machine.
- Do not stand or walk on the equipment even when the machine is lowered to the ground.
- It is advisable to lift and lower the spring-tined harrow with the tractor 3-point linkage from the tractor driving seat only.
- Hook the spring-tined harrow via the 3-point linkage to an appropriate tractor in terms of weight and power.
- Regularly check the integrity of the safety equipment and the machine structure before use.
- Check before use that persons, animals or objects do not stand in the working range of the machine.
- During transport of the machine, properly secure the linkage arms of the tractor 3-point linkage using the tension chains provided.
- The tractor should be driven by authorised and qualified personnel only.
- The operator should become familiar with the machine controls and their function before use.
- Ensure the distribution of weight on the tractor is balanced and safe: the application of the spring-tined harrow to the tractor 3-point linkage may lead to imbalance especially when the machine is raised. If necessary, apply ballasts to the front of the tractor to obtain the right weight balance.
- It is advisable to contact the manufacturer or supplier in case of any malfunction.
- The sole use of accessories provided by the manufacturer is allowed.

2.2 Safe maintenance

- Do not tamper with or remove safety devices on the spring-tined harrow.
- Do not proceed with any adjustments on the machine in steep or indulating conditions before you have turned the tractor engine off, applied the hand brake and secured the machine.
- Check regularly the integrity of the spring-tined harrow.
- Check regularly the tightness of nuts and bolts.
- Use original spare parts only. The use of non-original spare parts invalidates the machine warranty.
- Carry out maintenance operations according to the instructions described in the manufacturers handbook. Only qualified and trained personnel must be allowed to carry out maintenance operations.
- The instructions handbook must be read, memorised and stored safely throughout the duration of the machine.

2.3 Safety warnings

Safety signs are applied to the machine to indicate potential dangers.

The operator must fully understand the warning symbols on the machine:

DANGER
To draw the operator's attention to situations which could endanger his or other peoples safety.

CAUTION
To draw the operator's attention to situations which could affect the machine performance but not his or other peoples safety.

IMPORTANT
To draw the operator's attention to situations which do not affect the machine performance and his or other peoples safety.

2.4 Understanding the safety symbols

Before operating the machine, it is important that each operator understands the following explanations.

Safety symbol	Symbol meaning
1.	**BEFORE MAINTENANCE** 1. IMPORTANT, carefully read the manufacturers handbook before using the spring tined harrow.
2.	**DANGER OF BEING TRAPPED** 2. DO NOT stand between the tractor and spring tined harrow.
3.	**DANGER OF FALLING** 3. DO NOT climb on the equipment.
4.	**DANGER OF BEING CRUSHED** 4. DO NOT stand beside the machine during the extension of the folding wings.
5.	**LIFTING GEAR** 5. When lifting the machine always use appropriate lifting gear attached to the lifting points on the machine frame. Refer to the weight indicated on the machine identification label.

2.5 Position of safety warning signs

Safety signs are applied to the machine to indicate potential dangers. Keep signs clean and replace them whenever damaged. You must read carefully and memorise the meaning of safety signs as described:

DESCRIPTION OF SAFETY WARNING SIGNS (FIG.1):

1) Carefully read the manufacturers handbook before use of the spring-tined harrow.
2) Do not stand between the tractor and the spring-tined harrow: danger of being trapped.
3) Do not climb on the equipment: danger of falling.
4) Do not stand beside the machine during the extension of the folding wings: danger of being crushed.
5) Hooking points for the lifting of the machine: Refer to the weight indicated on the machine identification label.

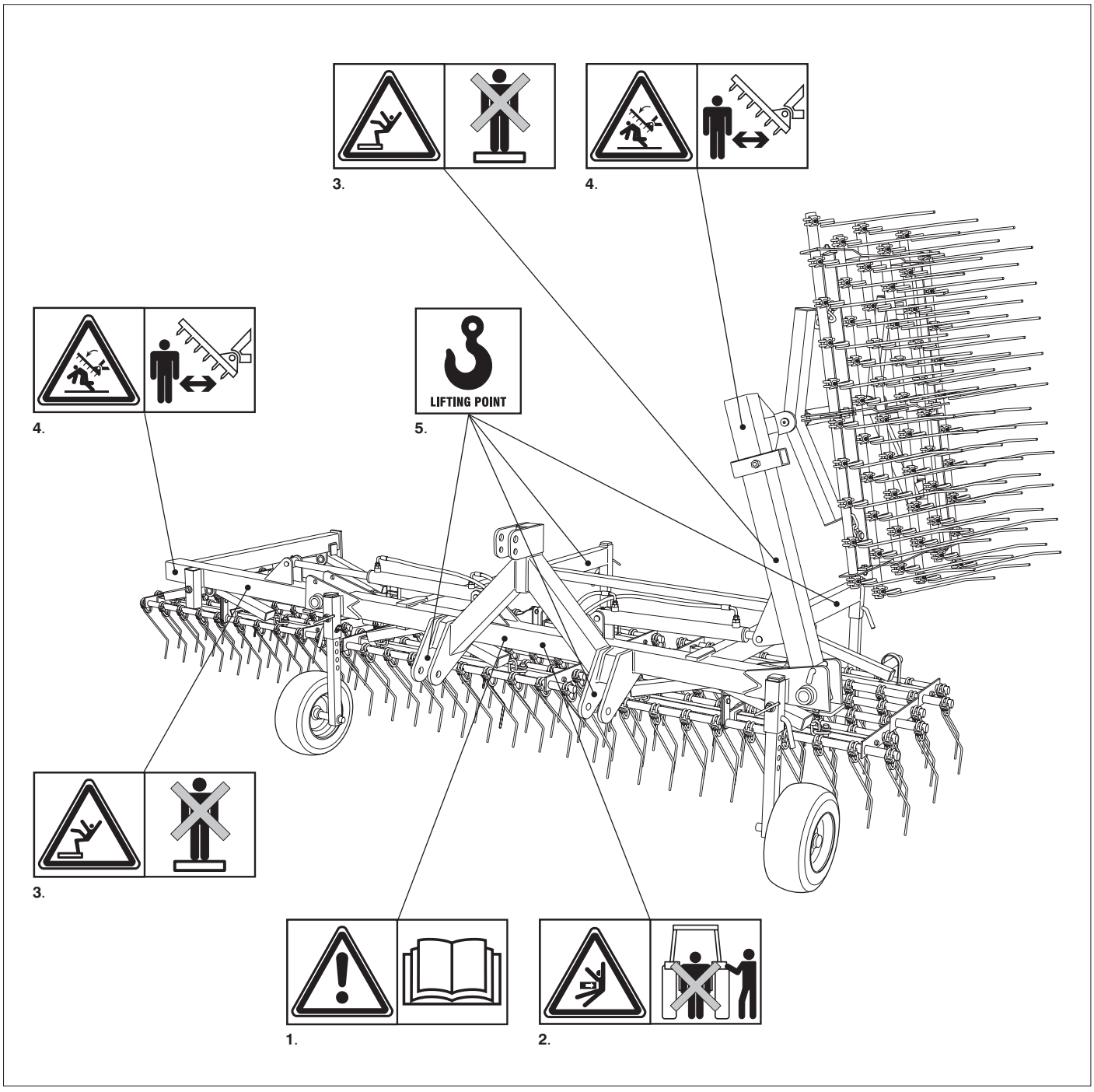


Fig.1 Position of safety warning signs

Section 3

INSTRUCTIONS FOR USE

3.0 Spring tined harrow movement

The spring-tined harrow is normally transported by tractor.
For long-distance transport the machine can be carried on trailers, trucks etc.

Adequate equipment (cranes, forklifts etc) provided with cables and chains must be used. Please refer to section 5.1 “Technical features” for weight and size of the machine.

Lifting slings must be secured to the lifting points indicated on the equipment with the sign “Hook” (5, Fig. 1).

Before lifting, ensure that any movable part of the machine is tightly fastened. Lift the machine slowly and carefully without any sudden movement or jerk.

Lifting and transport operations may be extremely dangerous. You must proceed with caution.

3.1 Before use

Before use you must verify that the machine is in perfect order.

Any operation before use must be carried out with the spring-tined harrow lowered and the tractor turned off and secured.

3.2 Folding wings

The 6 metre spring-tined harrow is equipped with hydraulic folding wings for safe transport. You must be extremely careful during the extension and closing of the wings. Ensure any persons, animals or objects are clear of the working area when raising or lowering the folding wings.

OPENING WINGS

- Link the machine to the tractor as described in section 3.3 “Connection to tractor”
- Make sure that the safety wing pins (1, Fig. 3) are correctly positioned.
- Insert the machines hydraulic feed and return pipes into the spool valves on the tractor.
- Adjust the tractor hydraulic lever to allow oil entry into the hydraulic rams.
- Remove the safety wing pins (Fig. 2).
- Open the wings by carefully adjusting the tractor hydraulic lever.

The Manufacturer declines any responsibility for any direct or indirect damage to persons, animals or objects due to non-observance of the instructions provided in the manufacturers handbook.

Fig. 2 Opening wings – remove wing pins

INSTRUCTIONS FOR USE

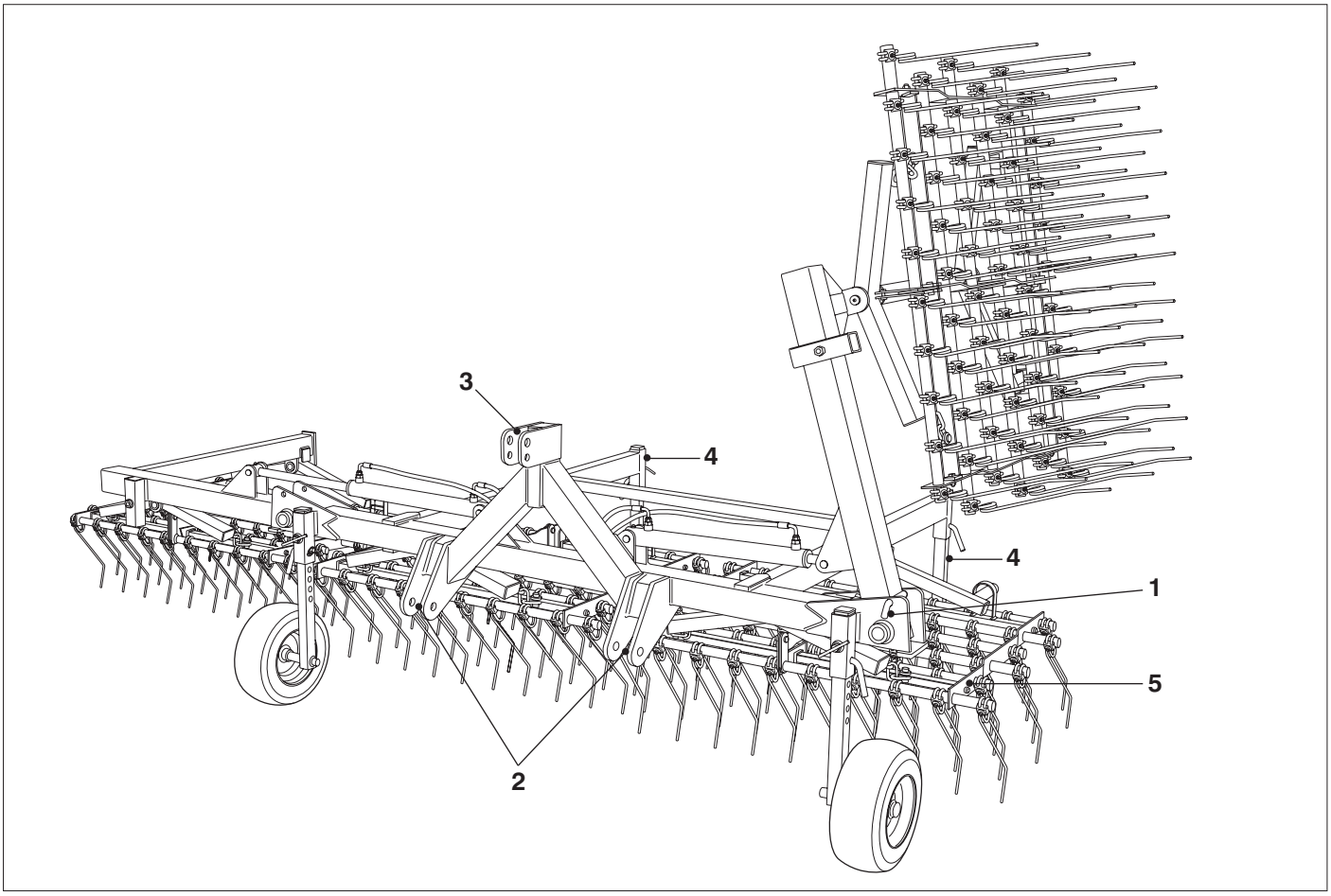


Fig.3 Connection to tractor

3.3 Connection to tractor

The spring-tined harrow can be connected to any tractor equipped with universal category 2, 3-point linkage.

The connection of the machine to the tractor may be a dangerous operation, please follow carefully the connection instructions.

- Position the spring-tined harrow on an even surface. Then, reverse the tractor until the lower link arms match with the two lower link points on the spring tined harrow (2, Fig. 3).
- Turn the tractor off and apply the hand brake. Wearing protective gloves, draw the link arms into the machines two lower link points (2, Fig. 3) align the holes and secure with the necessary linkage pins.
- Secure the tractor lift arms with the integral adjustment chains in order to avoid any unnecessary movement when the machine is raised.
- Join the tractor centre arm to the central linkage point on the spring tined harrow (3, Fig. 3). Secure the arm with the necessary linkage pins and adjust to ensure the spring-tined harrow frame is parallel to the ground.

3.4 When connected

- Do not use tractors with more power than necessary, see section 5.0 “Specification” (page 11).
- Once the machine has been connected to the tractor, only operate it from the driving seat.
- The machine must be lifted 40 – 50cm from the ground during movement.
- You must check the balance of weight along the axis of the tractor and add ballast to the front if necessary.

ROAD TRANSPORT OF THE SPRING-TINED HARROW AND TRACTOR:

Caution must be taken transporting the spring tined harrow on public roads in accordance with department of transport legislation and health and safety guidelines.

The Manufacturer declines all responsibility in case of any direct or indirect damage deriving from road transport of the spring-tined harrow connected to a tractor.

3.5 In work

Once in the field or work area, extend the folding wings of the machine as described previously and then lower to the ground.

You must proceed slowly during the working operation to allow the machine to adapt to the soil's profile. Move a short distance and then check the resulting work. If adjustment is required refer to the following instructions.

Drive carefully; fast speed could damage both the spring tined harrow and the tractor. You must consider several factors when choosing the adequate working speed, such as:

- The nature of the soil,
- The roughness or profile of the ground,
- The settings of the machine.

WORKING SAFETY

- **You must ensure that no persons, children or animals stand in the working range of the machine. Stones might be lifted from the ground during operation.**
- **Do not exceed 12 km/h (8 mph) during work.**
- **DO NOT TURN OR REVERSE DURING OPERATION WITH THE MACHINE LOWERED TO THE GROUND.**
- **TO CHANGE DIRECTION OR REVERSE, THE SPRING-TINED HARROW MUST BE LIFTED FROM THE GROUND.**
- **When turning or transporting ensure the machine is lifted 40 – 50cm from the ground.**
- **To ensure safety during transport adjust the tines so that they are completely lowered with back projection minimised.**

3.6 Working guidance

- Always make sure the top link is extended sufficiently, to provide enough pressure on the rear of the sections.
- Ideal speed range:
  Grassland: 4 – 8 mph
  Weeding: 1 – 7 mph
- In grassland use sufficient tine angle to allow thatch and debris to follow out through the tines.
- Always drive in a straight line.
- Always run the machine on the wheels at all times.
- To increase tine aggression, lift the wheels before angling the tines.

3.7 Centralised tine angle adjustment

A single lever allows the angle of all tines on a floating frame to be adjusted simultaneously. There are 6 possible positions of adjustment to obtain stronger or weaker action on the ground.

- On the adjustment lever remove the locking pin (A, Fig. 4) then adjust the lever (B, Fig. 4) to change the angle of the tines.
- Once adjusted secure the handle with the locking pin.

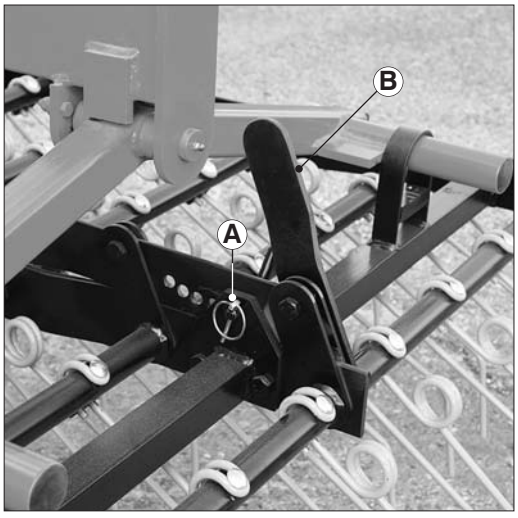


Fig. 4 Tine angle – centralised adjustment

3.8 Spring tines

The spring-tined harrow is equipped with 8mm diameter heavy duty spring tines.

You must constantly check the condition of tines in case of breakage during use. Broken tines must be replaced immediately (replacement tine product no: 11961 – see page 11).

3.9 Parking

Place the machine on a flat surface before unhooking, preferably undercover.

- Ensure the folding wings are raised to reduce the amount of space taken by the machine.
- Lower the support legs (4, Fig. 3) to ensure the stability of the machine.
- Unhook the machine from the tractor linkage and disconnect the hydraulic pipes from the spool valves.
- Proceed with careful cleaning of the equipment.

GENERAL MAINTENANCE

4.0 Maintenance

The spring-tined harrow does not require special maintenance operations. However it is advisable to follow a few simple instructions for perfect upkeep of the machine.

MAINTENANCE SAFETY

Any maintenance operation or adjustment must be carried out with the spring-tined harrow lowered to the ground and the tractor's engine switched off.

4.1 Daily Lubrication points

- Grease folding wing pivot points with lithium grease through the grease nipples (A and B, Fig. 5).
- Grease both pivot arms (A, Fig. 6) on each floating frame with lithium grease through the grease nipples located at each point.

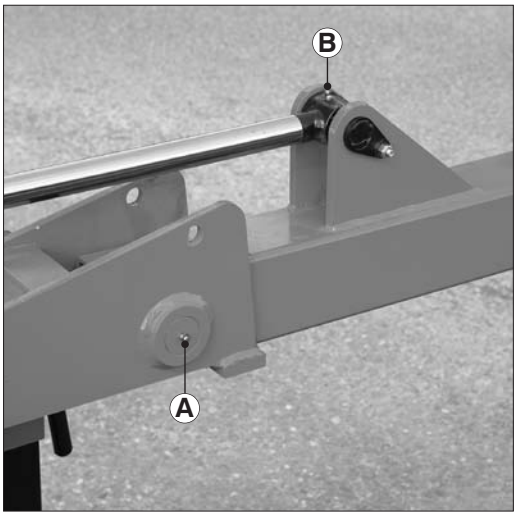


Fig. 5 Wing pivot lubrication

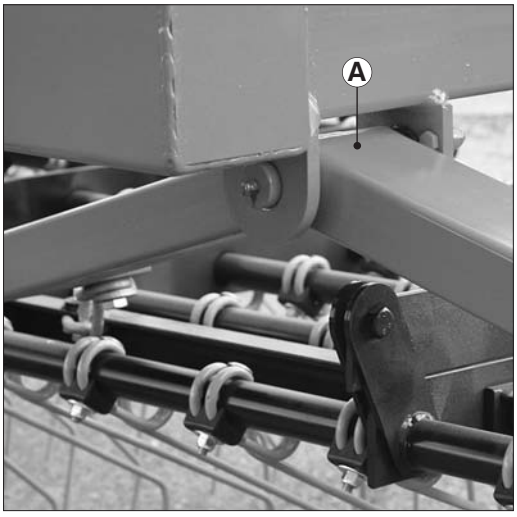


Fig. 6 Floating frame lubrication

4.2 After the first 8 working hours

- Carefully inspect the general condition of the equipment.
- Check for wear of the tines.
- Tighten nuts or bolts where necessary – it is advisable to regularly check the tightness of nuts and bolts on the machine.

4.3 Periodic inspections

- Before use ensure the screws that secure the tines are tight. This inspection should be carried out regularly when the machine is used daily.
- At least every six months you must remove the depth wheels and grease the bearings.

Fig. 7 Depth wheel lubrication

Section 5

SPECIFICATION and REPLACEMENT PARTS

5.0 Specification

SPRING TINED HARROW equipped with 8mm diameter spring-coil tines

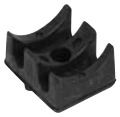
SPALDINGS PROD NO	WORKING WIDTH	NUMBER OF FLOATING SECTIONS	NUMBER OF TINES	WEIGHT	TRANSPORT WIDTH	POWER REQUIREMENT
16130	6m	4	240	850 kg	2.9m	Minimum 50hp

5.1 Replacement parts

SPALDINGS PROD NO	PART DESCRIPTION	NUMBER REQUIRED
11961	Heavy duty weeder tine, 8mm dia.	1.5m = 60 / 2m = 84
16129	Tine bolt	1.5m = 60 / 2m = 84
16128	Tine holder	1.5m = 60 / 2m = 84

11961

16129



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